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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/607,265 | 06/27/2003 | Mark R. Allen | 8322.002 | 4752 |
| 7590 12/10/2004 | | | EXAMINER | |
| Liniak, Berenato & White Ste. 240 6550 Rock Spring Drive Bethesda, MD 20817 | | | NGUYEN, MATTHEW VAN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2838 | |

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/607,265

Applicant(s)

ALLEN, MARK R.

Examiner

MATTHEW V NGUYEN

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

1. The disclosure should be carefully reviewed and ensure that any and all grammatical, idiomatic, and spelling or other minor errors are corrected.
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-7, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Bolger et al. (U.S. Pat. No. 5,459,478).

With regard to claims 1-3, 5-7, 9 and 10, Bolger et al. (i.e., Fig. 1) shows a current regulation system of a light emitting diode LED comprising a voltage source (14), an LED (12) connected to the voltage source, an FET (Q1) connected to the voltage source and the LED, in which the FET is a voltage driven component having an output governed by a junction voltage and being constant by connecting a gate and a source with a resistor (R8) to make a predetermined nonzero gate-source voltage, the current supplied to the LED being limited and being proportional to a maximum output current value defined the output voltage of the FET set by a gate-source voltage (col. 3, lines 58-62, col. 4, lines 8-12, lines 24-32), and the FET being disposed downstream of the LED.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolger et al. in view of Feng (U.S. pat. No. 6,748,180).

With regard to claims 4 and 11, Bolger et al. shows a current regulation system of a light emitting diode LED comprising all the claimed subject matter as discussed above, except for the gate and the source of the FET being electrically connected to create a substantially zero gate-source voltage, and at least two FETs being electrically connected to the voltage source and the LED.

Feng (i.e., Fig. 2) discloses a regulated high efficiency LED driver circuit in which the gate and the source of the FET (24) are connected to create a substantially zero gate-source voltage (i.e., gate and source being connected with no resistor) and at least two FETs (24, 26) in the circuit, both for the purpose of having "a very high equivalent resistance, extremely low leakage current and very small size" (col. 4, lines 30-33).

Since Bolger et al. And Feng are both from the same field of endeavor, the purpose disclosed by Feng would have been recognized in the pertinent art of Bolger et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize the substantially zero gate-source voltage and

two FETs as shown in Feng into the current regulation system of a LED for the purpose of obtaining a better power efficiency of the circuit via advantages as stated above.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolger et al.

With regard to claim 8, Bolger et al. shows a current regulation system of a light emitting diode LED comprising all the claimed subject matter as discussed above, except for the FET being disposed upstream of the LED (Bolger et al. shows the FET being disposed downstream of the LED).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the FET being disposed upstream of the LED, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Usami (U.S. Pat. No. 6,057,651), Runau et al. (U.S. Pat. No. 6,392,358) also disclose current regulation systems for an LED array, each of which comprises a switching element being a FET.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew V. Nguyen whose telephone number is (571) 272-2081.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2800.

Matthew V. Nguyen
MATTHEW V. NGUYEN
PRIMARY EXAMINER